

### **Abstract**

A bi-phase modulator for Ultra Wideband (UWB) waveforms uses a symmetrical transformation device and a selector device to produce bi-phase modulated UWB waveforms in response to an information signal. The symmetrical transformation device receives an input UWB waveform and produces equal but opposite polarity output waveforms. The selector device determines whether an inverted or non-inverted UWB waveform is output in response to the information signal.